

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

David R. Hembree
Alan G. Wood

Serial No.: 09/933,492

Art Unit: 2815

Filing Date: 08/20/2001

For: SEMICONDUCTOR COMPONENT
HAVING CONDUCTORS WITH
DIGITAL DATA PATTERN
(AS AMENDED)

Examiner: Chu, Chris

Attorney Docket No.: 00-0625.1

Confirmation No.: 6973

Customer No. 22823

Rebuttal Brief

August 16, 2007

Mail Stop Appeal Brief - Patents
Commissioner For Patents
P.O. Box 1450
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This Rebuttal Brief is being filed in response to the Examiner's Answer mailed on 07/31/2007.

Issue 1

Objection To Drawings

The Examiner's Answer on page 14, first paragraph, cites Jockmus v Leviton, 28 F.2d 812 (2d Cir. 1928) as holding: "Therefore, the picture must show all of the claimed structural features (i.e., the conductors having a pattern containing information) and how they are put together."

However, the Examiner has misrepresented Jockmus. In this regard, this case has nothing to do with the present issue of the drawings showing the claimed feature of the "conductors having a pattern containing information from the testing of the semiconductor components". Rather, the holding in this case is that figures in a catalogue can anticipate or make obvious a claimed invention (page 814, first paragraph). A copy of Jockmus is attached to the Rebuttal Brief. See also MPEP §2125 for a discussion of drawings as prior art and the context of Jockmus.

The controlling law for this issue is 37 CFR 1.83. As stated in MPEP 608.02(e) 37 CFR 1.83 requires that: "Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP 608.02(d).."

In the present case the conductors 22 (Figure 2F) and 22P (Figure 7B) are the structural detail illustrated in the drawings. The pattern is a characteristic of the conductors and is described in detail in the specification. Figures 4 and 5 illustrates aspects of the pattern. Persons skilled in the art of semiconductor packaging use sketches and written disclosure in their notebooks to convey ideas. The actual drawings are not required to convey the ideas. Similarly, most patents in the art do not use actual circuit drawings as they are too complex for a patent application, and usually not available at the time of the filing. The actual drawings can be generated by draftsman. The idea is the important element, and the issue is whether one skilled in the art can practice the invention based on the disclosure. It is submitted that one skilled in the art of semiconductor packaging could read the present specification and drawings and construct the claimed component with conductors having a pattern containing information from testing.

Issue 2

Objection To New Matter

In the Appeal Brief, Appellant cites page 13, line 22 to page 14, line 9 of the disclosure as supporting the claim recitations: "the conductors having a pattern containing information from testing of the semiconductor components".

The Examiner's Answer states on page 15, first paragraph: "According to the above foregoing original disclosure, the conductors 22 could correct some defects by substituting redundant circuitry contained on the defective component 12D, not containing information from testing of the semiconductor components. Thus, the new matter objection of the specification is correct".

The Examiner's statement is not accurate. The specification has not been amended so it is not possible for it to contain new matter. The issue is whether the claim amendments introduced new matter into the disclosure. However, the claim amendments are supported by the original disclosure. In this regard, the original specification states that information from patterning the redistribution layer with the conductors can be used for different objectives. For example, the pattern of the conductors can be used to substitute redundant circuitry for defective circuitry.

Issue 3

35 USC §112, first paragraph, Insufficient Written Description

In the final Office Action mailed 10/10/2006, claims 52, 56, 60 and 70 were rejected under 35 USC §112, first paragraph, as failing to comply with the written description requirement. See page 3, paragraph 5 of the final Office Action mailed 10/10/2006. These rejections do not appear to have been withdrawn by the Examiner. However, the Examiner's Answer does not list these rejections, and does not respond to Issue 3 of the Amended Appeal Brief submitted by Appellant.

In regard to these rejections, there is a mistake in the Amended Appeal Brief submitted by Appellant. In particular, the heading and first sentence of paragraph 3, on page 16 should read 35 USC §112, *first paragraph* rather than *second paragraph*. Appellant apologizes for any confusion resulting from this error in the Amended Appeal Brief. The correction is as follows.

3. 35 USC §112, *first paragraph*, rejections of claims 52, 56, 60 and 70 due to insufficient written description

The 35 USC §112, *first paragraph*, rejections of claims 52, 56, 60 and 70 due to insufficient written description are submitted to be in error.

Issue 4

35 USC §112, second paragraph, Indefiniteness

The Examiner's Answer states on page 16, first paragraph: "there must be some kind of special circuit designs that able to repair the defective component by switching on and off the specific circuits in the defective component, not by a redistribution function of the conductors. That is why the limitation "a plurality of redistribution conductors... in electrical communication with the component contacts configured to repair the defective component" is vague and indefinite because the term "repair" is not defined."

However, "repair" is a well known term in the art. In addition, the Examiner's reasoning is flawed as the "written description" requirement of 35 USC §112, first paragraph, is different than the "distinct claim" requirement of 35 USC §112, second paragraph. As held in In re Anderson, 471 F.2d, 1237, 176 USPQ 331 (CCPA 1973), it is not the role of the claims to enable one skilled in the art to reproduce the invention, but rather to define the legal metes and bounds of the invention.

The Examiner's Answer further states on page 16, second paragraph: "This argument is not persuasive because the above sentences clearly explain that any conductor that is made by metal or conductive lines on a substrate with a unique pattern allows defective components. However, the above sentences do not explain how are the conductors repaired, reconfigured, electrically isolated or excluded from clusters. Thus the limitation "the conductors having a pattern containing information from testing of the semiconductor components... for repairing the defective component" is vague and indefinite because the term "repairing" is not defined.

Appellant submits that the term "repairing" is well known term in the art and is definitive in the context of the claims. Further, the Examiner's reasoning is flawed as the "written description" requirement of 35 USC §112, first paragraph, is different than the "distinct claim" requirement of 35 USC §112, second paragraph.

Issue 5

35 USC §102 Over Tanizawa

All of the rejected independent claims recite "redistribution conductors on the components". The Examiner's Answer states on page 17, last paragraph: "This argument is not persuasive because appellant does not specifically claim that the redistribution conductors are unified or integrated conductors that directly formed on the uppermost layer of a wafer or semiconductor component. Since the circuit patterns 6 connect one contact in one location to the other contact in the other location and made by copper (column 5, lines 37 and 38), hence the circuit pattern 6 of Tanizawa read a redistribution conductors on the components, regardless it is formed on a separate film or not."

However, a redistribution conductor is configured to redistribute the pattern of first contacts (e.g., bond pads) on a component to a pattern of second contacts (e.g., RDL contacts) on the same component. With redistribution conductors both set of contacts are on the same component. In Tanizawa the different contact locations are on different components. See for example Figure 6a and 6b wherein conductors 6 are between a replacement chip 8 and a defective chip 2. With redistribution conductors, the present

component can be singulated into discrete packages or dice, whereas the Tanizawa component (wafer 1) can only be used at the wafer level.

All of the rejected independent claims also state that the redistribution conductors have "a pattern containing information from testing of the semiconductor components". The Examiner's Answer states on page 18: "This argument is not persuasive because the pattern 6B in figure 6(b) of Tanizawa is only directly connected to the good component, hence the pattern 6B clearly indicates that the connected component must be tested. Thus, the circuit patterns 6B of Tanizawa contains information from testing of the semiconductors to distinguish good and bad components."

However, the conductors 6 (Figure 6b) in Tanizawa have a standard pattern and information from testing is used only to identify the defective components. The concept of redistribution conductors having the stated structure (i.e., pattern containing information), which are configured to perform the stated function (i.e., repair) is not disclosed or enabled by Tanizawa.

Conclusion

In view of these arguments, and the arguments contained in the Amended Appeal Brief, Appellant requests reversal of the rejections, and allowance of claims 52-62 and 70-77.

DATED this 16th day of August, 2007.

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